

WE CLAIM:

1. A method of cleaning a medical cart, cage, instrument, or device, comprising:
dissolving a solid alkaline cleaning composition in water,
5 contacting the medical cart, cage, instrument, or device with the dissolved alkaline
cleaning composition at a temperature at or above ambient temperature.
2. The method of claim 1, wherein the solid alkaline cleaning composition
comprises a solid carbonate cleaning composition and the dissolved alkaline cleaning
10 composition comprises a dissolved carbonate cleaning composition.
3. A method of rinsing a medical cart, cage, instrument, or device, comprising:
dissolving a solid neutral or neutralizing rinse composition in water,
contacting the medical cart, cage, instrument, or device with the dissolved neutral or
15 neutralizing rinse composition at a temperature at or above ambient temperature.
4. The method of claim 3, wherein the solid neutral or neutralizing rinse
composition comprises a solid neutral rinse composition comprising:
about 5 to about 40 wt-% urea
20 about 60 to about 90 wt-% of one or more EO-PO block copolymer surfactants; and
water to provide a water:urea weight ratio of about 1:3 to about 1:6;
and the dissolved neutral or neutralizing rinse composition comprises a dissolved neutral
rinse composition.
- 25 5. The method of claim 3, wherein the solid neutral or neutralizing rinse
composition comprises a solid neutralizing rinse composition,
the solid rinse composition comprising:
about 1 to 25 wt-% of a nonionic block copolymer composition, having the
formula: $(EO)_x (PO)_y (EO)_z$
30 with a molecular weight between 10,000 and 15,000,
wherein x is 30 to 130,

y is 30 to 70,
z is 30 to 130, and
x+y is ≥ 60 ,
having a cloud point, measured with a 1 wt-% aqueous solution, of
5 greater than 100 °C;
about 1 to 25 wt-% of a defoamer composition; and
about 3 to 80 wt-% of a water soluble casting agent diluent;
and the dissolved neutral or neutralizing rinse composition comprises a dissolved
neutralizing rinse composition.

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6. A method for antimicrobial treatment of a medical cart, cage, instrument, or
device, comprising:

dissolving a solid antimicrobial composition in water,
contacting the medical cart, cage, instrument, or device with the dissolved
15 antimicrobial composition at a temperature at or above ambient temperature.

7. The method of claim 6, wherein the solid antimicrobial composition
comprises solid quaternary ammonium antimicrobial composition or solid halogen
antimicrobial composition,
20 and the dissolved antimicrobial composition comprises a dissolved quaternary
ammonium antimicrobial composition or halogen antimicrobial composition.

8. The method of claim 7, wherein the solid quaternary ammonium antimicrobial
composition comprises octyl decyl dimethyl ammonium chloride, dioctyl dimethyl
25 ammonium chloride, didecyl dimethyl ammonium chloride, and dimethyl benzyl ammonium
chloride.

9. The method of claim 7, wherein the solid halogen antimicrobial composition
comprises chlorinated trisodium phosphate.

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10. The method of claim 7, wherein the contacting continues for a time and at a

concentration of antimicrobial composition sufficient for sanitizing the medical cart, cage, instrument, or device.

11. The method of claim 7, wherein the contacting continues for a time and at a concentration of antimicrobial composition sufficient for disinfecting the medical cart, cage, instrument, or device.

12. The method of claim 11, wherein the solid antimicrobial composition comprises octyl decyl dimethyl ammonium chloride, dioctyl dimethyl ammonium chloride, didecyl dimethyl ammonium chloride, dimethyl benzyl ammonium chloride, or a combination thereof.

13. A method of cleaning a medical cart, cage, instrument, or device, comprising:
dissolving a solid carbonate cleaning composition in water,
the solid carbonate cleaning composition comprising:
about 10 to 80 wt-% of Na_2CO_3 , and
an effective sequestering amount of an organic phosphonate
hardness sequestering agent;
wherein the solid carbonate cleaning composition comprises:
non-hydrated sodium carbonate, and
a binding agent comprising hydrated sodium
carbonate and organic phosphonate; and
contacting the medical cart, cage, instrument, or device with the dissolved carbonate
cleaning composition at a temperature at or above ambient temperature.

14. The method of claim 13, wherein the solid cleaning composition is substantially free of a second source of alkalinity.

15. The method of claim 13, wherein the solid cleaning composition further comprises an alkali metal silicate having a $\text{M}_2\text{O}:\text{SiO}_2$ ratio of about 1:1 to 1:5.

16. The method of claim 13, wherein the binding agent:
is dispersed throughout the solid cleaning composition;
comprises the alkali metal carbonate hydrate and the organic sequestrant that form a
binding agent comprising an organo phosphonate or an organo amino acetate and water;
5 comprises, for each mole of the organic sequestrant, about 3 to 10 moles of the
carbonate monohydrate and 5 to 15 moles of water; and
has a melting transition temperature of greater than about 120°C.

17. The method of claim 13, further comprising:
10 dissolving a solid rinse composition in water; and
rinsing the medical cart, cage, instrument, or device with the dissolved rinse
composition.

18. The method of claim 17, wherein the solid rinse composition comprises a
15 nonionic surfactant and urea.

19. The method of claim 18, wherein the solid rinse composition comprises:
about 5 to about 40 wt-% urea
about 60 to about 90 wt-% of one or more EO-PO block copolymer surfactants; and
20 water to provide a water:urea weight ratio of about 1:3 to about 1:6.

20. The method of claim 17, wherein the solid rinse composition comprises:
about 1 to 25 wt-% of a nonionic block copolymer composition, having the formula:

(EO)_x (PO)_y (EO)_z
25 with a molecular weight between 10,000 and 15,000,
wherein x is 30 to 130,
y is 30 to 70,
z is 30 to 130, and
x+y is ≥ 60,
30 having a cloud point, measured with a 1 wt-% aqueous solution, of greater
than 100 °C;

about 1 to 25 wt-% of a defoamer composition; and
about 3 to 80 wt-% of a water soluble casting agent diluent.

21. The method of claim 17, further comprising:
5 dissolving a solid antimicrobial composition in water; and
contacting the medical cart, cage, instrument, or device with the dissolved
antimicrobial composition at a temperature at or above ambient temperature.

22. The method of claim 13, further comprising:
10 dissolving a solid antimicrobial composition in water; and
contacting the medical cart, cage, instrument, or device with the dissolved
antimicrobial composition at a temperature at or above ambient temperature.

23. The method of claim 17, wherein the solid antimicrobial composition
15 comprises a solid quaternary ammonium antimicrobial agent or a solid halogen antimicrobial
agent.

24. The method of claim 23, wherein the solid quaternary ammonium
antimicrobial agent comprises octyl decyl dimethyl ammonium chloride, dioctyl dimethyl
20 ammonium chloride, didecyl dimethyl ammonium chloride, and dimethyl benzyl ammonium
chloride.

25. The method of claim 24, wherein the solid halogen antimicrobial agent
comprises chlorinated trisodium phosphate.
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26. The method of claim 22, wherein the contacting continues for a time and at a
concentration of antimicrobial composition sufficient for sanitizing the medical cart, cage,
instrument, or device.

30 27. The method of claim 22, wherein the contacting continues for a time and at a
concentration of antimicrobial composition sufficient for disinfecting the medical cart, cage,

instrument, or device.

28. The method of claim 27, wherein the solid antimicrobial composition comprises octyl decyl dimethyl ammonium chloride, dioctyl dimethyl ammonium chloride, 5 didecyl dimethyl ammonium chloride, dimethyl benzyl ammonium chloride, or a combination thereof.

29. A method of rinsing a medical cart, cage, instrument, or device, comprising:
dissolving a solid rinse composition in water,
10 the solid rinse composition comprising:
about 5 to about 40 wt-% urea,
about 60 to about 90 wt-% of one or more EO-PO block copolymer
surfactants; and
water to provide a water:urea weight ratio of about 1:3 to about 1:6;
15 rinsing the medical cart, cage, instrument, or device with the dissolved rinse
composition.

30. The method of claim 29, wherein the solid rinse composition comprises about 5 to about 15 % by weight urea.

20 31. The method of claim 29, wherein the solid rinse composition comprises about 80 to about 90 % by weight surfactant.

32. The method of claim 29, wherein the synthetic organic surfactant comprises a 25 polyoxyethylene/polyoxypropylene glycol polymer.

33. A method of rinsing a medical cart, cage, instrument, or device, comprising:
dissolving a solid rinse composition in water,
the solid rinse composition comprising:
30 about 1 to 25 wt-% of a nonionic block copolymer composition,
having the formula: $(EO)_x (PO)_y (EO)_z$

with a molecular weight between 10,000 and 15,000,
wherein x is 30 to 130,
y is 30 to 70,
z is 30 to 130, and
x+y is ≥ 60 ,
having a cloud point, measured with a 1 wt-% aqueous
solution, of greater than 100 °C;
about 1 to 25 wt-% of a defoamer composition; and
about 3 to 80 wt-% of a water soluble casting agent diluent;
rinsing the medical cart, cage, instrument, or device with the dissolved rinse
composition.

34. The composition of claim 33, wherein the casting agent comprises a
polyalkylene glycol.

35. The composition of claim 33, wherein the casting agent comprises a
carbonate.

36. The composition of claim 33, wherein the defoamer comprises a silicone
defoamer.

37. A method of cleaning a medical cart, cage, instrument, or device, comprising:
dissolving a solid carbonate cleaning composition in water,
the solid carbonate cleaning composition comprising:
about 10 to 80 wt-% of Na_2CO_3 ,
an effective sequestering amount of an organic
phosphonate hardness sequestering agent, and
an alkali metal silicate having a $\text{M}_2\text{O}:\text{SiO}_2$ ratio of
about 1:1 to 1:5;
wherein the solid cleaning composition comprises:
non-hydrated sodium carbonate, and

a binding agent comprising hydrated sodium carbonate and organic phosphonate; and contacting the medical cart, cage, instrument, or device with the dissolved carbonate cleaning composition at a temperature at or above ambient temperature.

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38. A method of cleaning a medical cart, cage, instrument, or device, comprising: dissolving a solid carbonate cleaning composition in water,

the solid carbonate cleaning composition comprising:

about 10 to 80 wt-% of Na_2CO_3 , and

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an effective sequestering amount of an organic phosphonate

hardness sequestering agent;

wherein the solid cleaning composition comprises

non-hydrated sodium carbonate, and

a binding agent comprising hydrated sodium carbonate

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and organic phosphonate;

wherein the binding agent:

is dispersed throughout the solid cleaning composition;

comprises the alkali metal carbonate hydrate and the organic

sequestrant that form a binding agent comprising an organo

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phosphonate or an organo amino acetate and water;

comprises, for each mole of the organic sequestrant, about 3 to

10 moles of the carbonate monohydrate and 5 to 15 moles of water;

and

has a melting transition temperature of greater than

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about 120°C ; and

contacting the medical cart, cage, instrument, or device with the dissolved carbonate cleaning composition at a temperature at or above ambient temperature.

39. A method of cleaning a medical cart, cage, instrument, or device, comprising:

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dissolving a solid carbonate cleaning composition in water,

the solid carbonate cleaning composition comprising:

about 20 to about 55 wt-% of Na_2CO_3 ,
about 3 to about 15 wt-% of an organic phosphonate hardness
sequestering agent, and
about 0.1 to about 20 wt-% surfactant;
5 wherein the solid cleaning composition comprises:
non-hydrated sodium carbonate, and
a binding agent comprising hydrated sodium
carbonate and organic phosphonate; and
contacting the medical cart, cage, instrument, or device with the dissolved carbonate
10 cleaning composition at a temperature at or above ambient temperature.

40. The method of claim 39, wherein the solid carbonate cleaning composition
further comprises about 10 to about 30 wt-% of an alkali metal silicate having a $\text{M}_2\text{O}:\text{SiO}_2$
ratio of about 1:1 to 1:5.

15 41. The method of claim 39, wherein the solid carbonate cleaning composition
further comprises less than about 10 wt-% of alkali metal hydroxide.